PATENT

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October 10, 2003 — Denise Sheridan

Date

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Kie Ahn and Leonard Forbes — Attorney Docket No. : 501306.01

Filed : Concurrently herewith — Customer No. : 27,076

Title : LANTHANIDE OXIDE/ZIRCONIUM OXIDE ATOMIC LAYER DEPOSITED NANOLAMINATE GATE DIELECTRICS

INFORMATION DISCLOSURE STATEMENT

Mail Stop Patent Application
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with 37 C.F.R. §§ 1.56 and 1.97 through 1.98, applicant wishes to make known to the Patent and Trademark Office the references set forth on the attached form PTO-1449 (copies of the cited references, as required under 37 C.F.R. § 1.98, are enclosed). Applicant notes that this application was filed after June 30, 2003, and therefore copies of the references cited in the "U.S. Patent Documents" section of the attached form PTO-1449 have not been enclosed. Although the aforesaid references are made known to the Patent and Trademark Office in compliance with applicant's duty to disclose all information he is aware of which is believed relevant to the examination of the above-identified application, applicant believes that his invention is patentable.

Please acknowledge receipt of this Information Disclosure Statement and kindly make the cited references of record in the above-identified application.

Respectfully submitted,

DORSEY & WHITNEY LLP

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MWR:dms

Enclosures:
Postcard
Form PTO-1449
Cited References (7)

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FORM PTO-1449 (REV.7-80)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. 501306.01	APPLICATION NO. not yet assigned
INFORMATION DISCLOSURE STATEMENT *(Use several sheets if necessary)*		APPLICANT(S) Kie Ahn et al.	
		FILING DATE Concurrently herewith	GROUP ART UNIT not yet assigned

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	AA						
	AB						
	AC						
	AD						

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	AE							
	AF							

OTHER PRIOR ART *(Including Author, Title, Date, Pertinent Pages, Etc.)*

	AG	Jeon, Sanghun, et al., "*Excellent Electrical Characteristics of Lanthanide Oxide and Lanthanide-doped Oxide for MOS Gate Dielectric Applications*," IEEE, 2001, pp. 01-471 to
	AH	Kukli, Kaupo, et al., "*Influence of thickness and growth temperature one the properties of zirconium oxide films grown by atomic layer deposition on silicon*," Thin Solid Films 410, 2002, pp. 53-60.
	AI	Kukli, Kaupo, et al., " *Dielectric Properties of Zirconium Oxide Grown by Atomic Layer Deposition from Iodide Precursor*," Journal of The Electrochemical Society, Vol. 148, No. 12,
	AJ	Kukli, Kaupo, et al., "*Properties of Ta_2O_5-Based Dielectric Nanolaminates Deposited by Atomic Layer Epitaxy*," Journal of The Electrochemical Society, Vol. 144, No. 1, 1997, pp. 300-306.
	AK	Kukli, Kaupo, et al., "*Atomic layer deposition of zirconium oxide from zirconium tetraiodide, water and hydrogen peroxide*," Journal of Crystal Growth, Vol. 231, 2001, pp. 262-272.
	AL	Sneh, Ofer, "*Thin film atomic layer deposition equipment for semiconductor processing*," Thin Solid Films 402, 2002, pp. 248-261.
	AM	Zhang, H., "*High permittivity thin film nanolaminates*," Journal of Applied Physics, Vol. 87, No. 4, 2000, pp. 1921-1924.

EXAMINER	DATE CONSIDERED

* EXAMINER: Initial if reference considered, whether or not criteria is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant(s).